

WHAT IS CLAIMED IS:

1. A method of refining glass in a melting unit, said melting unit comprising a continuously operable melting unit which melting unit comprises a portion to melt a feed material, said method comprising:

producing a melt of molten glass from feed material in said portion to melt a feed material;

minimizing at least one compound of nitrate in said melt by omitting said at least one compound of nitrate in the feed material or by removing said at least one compound of nitrate from said melt of molten glass;

refining said melt by (i.), (ii.), (iii.), (iv.), and (v.):

(i.) introducing at least one fining agent in said melt;

(ii.) forming, in said melt, a first gas comprising at least one product of decomposition of the feed material;

(iii.) forming, in said melt, a second gas comprising at least one product of decomposition of said at least one fining agent;

(iv.) combining said first gas and said second gas into bubbles; and

(v.) heating said melt to substantially remove said bubbles from said melt; and

said method further comprising:

introducing by blowing, during melting, a gas, comprising substantially oxygen, into said melt, and thereby setting and maintaining the reduction-oxidation state of said at least one fining agent in said melt of molten glass in the highest reduction-oxidation state.

2. The method according to Claim 1, wherein:

said introducing by blowing said gas comprises blowing said gas in said portion for melting of said melting unit, from the bottom of said melt to the top of said melt, and beneath a batch

blanket disposed on the top of said melt of molten glass.

3. The method according to Claim 2, wherein:

said gas is blown in a quantity sufficient and for a period of time sufficient to maintain said at least one fining agent in said highest oxidation state to refine said melt.

4. The method according to Claim 3, wherein:

said gas comprises a mixtures of oxygen and at least one inert gas comprising: helium, neon, argon, krypton, or nitrogen, carbon dioxide, and steam.

5. The method according to Claim 4, wherein:

said oxygen is present in the range of from about 90 percent by volume to about 100 percent by volume.

6. The method according to Claim 5, wherein:

said gas comprises substantially pure oxygen.

7. The method according to Claim 6, wherein:

said feed material comprises a lithium-aluminum-silicate glass.

8. A method of refining glass, comprising the steps of: preparing a melt of molten glass;

providing at least one fining agent in said melt of molten glass;

introducing a gas, comprising substantially oxygen, into said melt of molten glass; and removing refined glass.

9. The method according to Claim 8, wherein:

said gas comprises a mixtures of oxygen and at least one inert gas comprising: helium, neon, argon, krypton, or nitrogen, carbon dioxide, and steam.

10. The method according to Claim 9, wherein:

said oxygen is present in the range of from about 90 percent by volume to about 100 percent by volume.

11. The method according to Claim 10, wherein:

said gas comprises substantially pure oxygen.

12. In a method of making glass, a method of setting and maintaining the reduction-oxidation state of fining agents in a glass melt, said setting and maintaining method comprising;

forming a melt of molten glass;

providing at least one fining agent in said melt of molten glass; and

introducing, during melting, a gas, comprising sufficient oxygen, into said melt, to set and maintain the reduction-oxidation state of said at least one fining agent in said melt of molten glass in the highest reduction-oxidation state.

13. The method according to Claim 12, wherein:

said gas comprises a mixtures of oxygen and at least one inert gas comprising: helium, neon, argon, krypton, or nitrogen, carbon dioxide, and steam.

14. The method according to Claim 13, wherein:

said oxygen is present in the range of from about 90 percent by volume to about 100 percent by volume.

15. The method according to Claim 14, wherein:

said gas comprises substantially pure oxygen.

16. A plant for melting and refining glass, comprising:

an arrangement to prepare a melt of molten glass;

an arrangement to provide at least one fining agent in said melt of molten glass;

apparatus being configured to introduce a gas, comprising substantially oxygen, into said melt of molten glass; and

an arrangement to remove refined glass.

17. The plant in accordance with claim 16, wherein:

said arrangement to prepare a melt of molten glass comprises said arrangement to provide at least one fining agent.

18. A method of making a stove for cooking food, said method comprising:

providing a stove body, said stove body comprising:

a base to support said stove;

said stove body being configured with an interior confined by walls comprising a top surface, side walls, a front wall, and a rear wall;

an oven in said stove body;

a heating arrangement configured and disposed to provide heating to cook food in said oven; and

control apparatus to control said heating arrangement; mounting a door in said front wall;

said door comprising;

a window arrangement configured with a viewing area to view food being cooked in the interior of said oven; and

securing at least one pane comprising a glass in said door;

said glass of said at least one pane comprising a fined glass being produced by the method comprising the steps of:

preparing a melt of molten glass;

providing at least one fining agent in said melt of molten glass;

introducing a gas, comprising substantially oxygen, into said melt of molten glass;

removing refined glass;

shaping said refined glass to produce said at least one pane for said door of said stove.

19. A method of making a glass article, such as a glass or glass ceramic for a window of an oven for cooking food, a glass or glass ceramic working pad for use in household kitchens, a glass or glass ceramic working pad for use in laboratories, a glass or glass ceramic cutting board, a glass or glass ceramic inspection panel, a glass or glass ceramic cover panel, an inspection and viewing window for baking ovens, an inspection and viewing window for industrial furnaces, an inspection and viewing window for incinerators, an inspection and viewing window for room heaters, an inspection and viewing window for chimneys, an inspection and viewing window for stoves, a glass or glass

ceramic heating element, a glass or glass ceramic heating element for hot trays, a glass or glass ceramic heating element for room heaters, a glass or glass ceramic cover plate for heating elements and lights, a glass or glass ceramic cover plate for heating elements for barbecues, a glass or glass ceramic for drip trays, a glass or glass ceramic for ultraviolet radiation shields, a glass or glass ceramic for heat resistant cover panels for lights, a glass or glass ceramic working pads for use in industrial plants, a glass or glass ceramic for soldering pads, a glass or glass ceramic inspection and safety plate for use in chemical separation processes, a glass or glass ceramic inspection and safety plate for use in process measurements, a glass or glass ceramic inspection and safety plate for use in process control, a transparent glass ceramic inspection window and cover plate for use in solid fuel stoves, a transparent glass ceramic inspection window and cover plate for use in wood burning stoves, a transparent glass ceramic inspection window and cover plate for use in chimneys, a transparent glass ceramic inspection window and cover plate for use in industrial furnaces, a transparent glass ceramic inspection window and cover plate for use in gas and electric radiant heaters;

said method comprising:

preparing a melt of molten glass;

providing at least one fining agent in said melt of molten glass;

introducing a gas, comprising substantially oxygen, into said melt of molten glass;

removing refined glass; and

shaping said refined glass to produce a corresponding glass article.

20. The method according to Claim 19, comprising:  
ceramizing said refined glass.